

(12) AUSTRALIAN PATENT ABSTRACT  
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(54) ADJUSTABLE FIN  
(71) GLENYS JOY GUDGEON  
(21) 60532/86 (22) 24.7.85 (23) 24.7.86 (24) 24.7.85  
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(74) AH  
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Referring to Figs. 1 and 2, there is illustrated a fin assembly 10 according to a first embodiment of the present invention including a fin member 11 engaged with a holder or box 12 which in use is secured to the base of a surf board, sailboard or the like so that its upper surface is flush with the underside thereof. The holder 12 is of generally channel shaped form and provided with a pair of spaced side walls 13 which are provided with respective opposed longitudinally extending grooves 14 whilst the base of the holder 15 is provided with a plurality of upstanding projections 16 defining therebetween respective recesses 17 which serve to determine the position of the fin member 11 in use.

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The base portion 18 of the fin member 11 is provided on its underside with a pair of spaced slots 19 which open outwardly into the lower edge of fin base portion 18 and communicate at their inner ends with respective transversely extending bores 20 each of which supports in use a respective locking pin assembly 21.

#### Claim

1. A fin assembly for surf boards, surf skis and the like, said fin assembly comprising (a) a fin holder having an elongated channel with opposing side walls and base wall, and (b) a fin having a positioning base portion sized for insertion in said channel and longitudinally slidable therein, said fin being resiliently engaged with said fin holder such that in use said fin is held firmly in one of a plurality of positions but slidable to another of said positions by applying sufficient force to deform the resilient engagement between the fin and fin holder.

8. A fin for surf boards, surf skis and the like, said fin having a base portion adapted to be inserted in an elongated fin holder and slidable longitudinally therein, said fin having at least one resilient projection extending from its base portion to engage a respective recess in the fin holder.

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APPLICANT:

GLENYS JOY GUDGEON

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Patents Act 1952-1973

COMPLETE SPECIFICATION FOR THE INVENTION ENTITLED:-

"IMPROVED FIN AND FIN ASSEMBLY"

The following statement is a full description  
of this invention, including the best method of  
performing it known to me:-

THIS INVENTION relates to an improved fin and fin assembly particularly suited for use with surf boards, surf skis, sailboards or any other applications.

5                   It is desirable in surf board applications to employ a fin which may not only be easily detachably engaged with a surf board so as to permit easy replacement in the event of damage but also which may be adjustable longitudinally so as to vary surf board  
10 handling or to cater for variations in the type of waves encountered and the size and the weight of the surfer so that optimum handling of a surf board can be achieved. One such assembly proposed in the past includes a fin holding member or box which is generally channel shaped  
15 and which is embedded in the surf board and a fin which has a base which locates within the channel and may be secured thereto by a screw fastener so that infinite variations in adjustment of the position of the fin can be achieved. A disadvantage of this arrangement is  
20 that a separate tool is normally required so as to release the fin from a particular set position and move it to a new position whereafter it may be reset. This arrangement is particularly disadvantageous if for example a fin breaks and is required to be removed and replaced  
25 with a new fin where one is located at a remote position.

The present invention aims to overcome or at least alleviate some of the above disadvantages by

providing an improved fin which may be simply engaged with a holder and adjusted relative thereto in a reliable and efficient manner. The present invention also provides a fin assembly including a fin of the above  
5 type and a fin holder or box. The present invention is suitable for application to surf boards, surf skis, sailboards or other applications wherein a fin is employed, for example water skis. Other objects and advantages of the invention will become apparent from the following  
10 description.

In order that the invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings which illustrate a preferred embodiment of the invention and  
15 wherein:-

Fig. 1 is a sectional elevational view of a fin assembly according to the present invention;

Fig. 2 is a sectional end elevational view of the fin assembly illustrated in Fig. 1;  
20

Figs. 3 and 4 illustrate respective elevational and end elevational views of a locking pin for use with the fin assembly illustrated in Figs. 1 and 2;

Figs. 5 and 6 illustrate respective elevational and end elevational views of an alternative locking pin assembly;  
25

Fig. 7 illustrates in sectional elevational view a further alternative locking pin for the fin assembly;

Fig. 8 is a sectional view along line A-A of Fig. 7;

Fig. 9 illustrates an alternative fin assembly according to the present invention.

Referring to Figs. 1 and 2, there is illustrated a fin assembly 10 according to a first embodiment of the present invention including a fin member 11 engaged with a holder or box 12 which in use is secured to the base of a surf board, sailboard or the like so that its upper surface is flush with the underside thereof. The holder 12 is of generally channel shaped form and provided with a pair of spaced side walls 13 which are provided with respective opposed longitudinally extending grooves 14 whilst the base of the holder 15 is provided with a plurality of upstanding projections 16 defining therebetween respective recesses 17 which serve to determine the position of the fin member 11 in use.

The base portion 18 of the fin member 11 is provided on its underside with a pair of spaced slots 19 which open outwardly into the lower edge of fin base portion 18 and communicate at their inner ends with respective transversely extending bores 20 each of which supports in use a respective locking pin assembly 21.

Each pin assembly 21 preferably includes a

cylindrical boss portion 22 adapted to be located in a respective bore 20 and extend to opposite sides of the fin member 11 in the manner shown in Fig. 2, so as to locate in use in the opposite grooves 14 of the holder 15. Each pin assembly 21 also includes a tongue portion 23 which is preferably formed of resilient material and which extends out of the slot 19 to engage the holder 12 in a selected recess 17 between a pair of projections 16 at the base of the holder 12 to thereby determine the longitudinal position of the fin member 11 relative to the holder 12. Preferably the length of each tongue portion 23 is such as to resiliently engage to base of the holder 12 at the selected recess 17 to thereby urge the fin member 11 outwardly to ensure secure engagement of the boss portions 22 with the grooves 14. When it is desired to adjust the longitudinal position of the fin member 11 relative to the holder 12, a longitudinal force may be simply applied thereto, thus causing the tongue portions 23 to be resiliently deflected and pass into the adjacent recesses 17 until the desired longitudinal position has been reached at which the pin assemblies 21 will lock the fin member 11 in its desired position and prevent normal longitudinal movement thereof. Preferably the pin assemblies 21 are moulded in one piece of resilient plastics material such as urethane or any other suitable material, however, if desired, and as shown in Figs. 5 and 6, the boss portions

22 of the pin assemblies 21 may be provided with a central bore 24 to receive a stiffening member 25 such as a metal, fibreglass or plastics pin or the like. Alternatively, and as shown in Figs. 7 and 8, the boss portions 22 may be formed of rigid material such as metal and provided with a central reduced diameter shank portion 26 and the tongue portion 23 formed separately of resilient material with a sleeve 27 at one end for engagement about the shank portion 26. Of course any other composite or one piece arrangement for the pin assemblies 21 apparent to persons skilled in the art may be employed. Preferably the boss portion 22 of the pin assembly 21 in each instance is sized to be an interference fit with the bore 20 in the fin base so as to be retained securely therein. Alternatively, the boss portions 22 may be secured by adhesives or during the moulding process by moulding therearound.

In an alternative configuration shown in Fig. 9, the fin member 11 is provided with a pair of spaced bosses 27 which engage with the grooves 14 of the holder 12 in a similar manner to that shown in Figs. 1 and 2 whilst a blind bore or slot 28 is provided in the base of the fin member 11 intermediate the bosses 27 for receipt of a resilient insert 29 which engages a selected recess 17 in the holder 12 to lock the fin member in a desired longitudinal position. In this instance, the length of the insert 29 is such



as to resiliently engage a selected recess 17 of the holder 12 to again apply an outward force on the fin member 11 to ensure the fin member 11 remains in secure engagement with the holder 12. In this instance 5 the bosses 27 may be formed in conventional manner of metal and engaged frictionally with preformed apertures in the fin base after moulding thereof or adhered therein. Alternatively, the bosses 27 may be formed integrally with the fin member 11 and in this latter instance, 10 comprise projections on either side of the fin member which engage with the respective grooves 14. In one embodiment the bore or slot 28 may be of simple circular cross section formed by drilling into the base of the fin member 11 so as to receive a cylindrical insert. 15 Alternatively, the slot 28 may comprise a simple transversely extending recess to receive an insert say of rectangular shape which preferably is secured in the recess by adhesives or by frictional engagement.

The holder or box 12 in each instance and 20 as is conventional in the art, is provided with recesses at one end formed in the internal face of the side walls 13 and communicating with the respective grooves 14 so that the bosses of the fin member 11 may be passed therethrough and into the respective opposed 25 grooves 14.

In yet an alternative configuration, the holder base may be provided with a single projection 16

or any number of projections 16 and the base of the  
fin member 11 provided with a resilient pad (which  
may be located in a recess in the base) having a  
plurality of projections or serrations therein which  
5 engage with the single projections 16 or plurality of  
projections 16 on the holder to again locate the fin  
member in its desired longitudinal position and also  
permit adjustment thereof. In this case of  
course the adjustment positions are determined by the  
10 positions of the serrations in the resilient pad.

While the above has been given by way of  
illustrative example of the invention, it will of  
course be realised that many modifications and  
variations may be made to the above described  
15 embodiment by persons skilled in the art without  
departing from the broad scope and ambit of the  
invention as herein set forth and defined in the  
appended claims.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. A fin assembly for surf boards, surf skis and the like, said fin assembly comprising (a) a fin holder having an elongated channel with opposing side walls and base wall, and (b) a fin having a positioning base portion sized for insertion in said channel and longitudinally slidable therein, said fin being resiliently engaged with said fin holder such that in use said fin is held firmly in one of a plurality of positions but slidable to another of said positions by applying sufficient force to deform the resilient engagement between the fin and fin holder.
2. A fin assembly as claimed in Claim 1, wherein said resilient engagement is between said base wall and said base portion of the fin.
3. A fin assembly as claimed in Claim 2, wherein said resilient engagement comprises at least one resilient tongue extending from one of said base portion or base wall and engageable with a series of longitudinally separated recesses in the other of said base portion or base wall.
4. A fin assembly as claimed in Claim 3, wherein the base portion of said fin comprises at least one slot transverse to the plane of the fin and communicating with a transverse bore at its inner end, said bore containing a boss

member connected to a resilient tongue extending along the slot and protruding therefrom to engage a recess in said base wall.

5. A fin assembly as claimed in Claim 3 or 4, wherein each tongue is made of urethane or other plastics material.

6. A fin assembly as claimed in Claim 2, wherein said resilient engagement comprises at least one resilient tongue extending from the edge of the fin base and engageable with one of a series of longitudinally separated recesses in said base wall.

7. A fin assembly as claimed in Claim 2, wherein said resilient engagement comprises at least one projection on said base wall engaging a resilient rack on the base of said fin having a series of longitudinally spaced recesses.

8. A fin for surf boards, surf skis and the like, said fin having a base portion adapted to be inserted in an elongated fin holder and slidable longitudinally therein, said fin having at least one resilient projection extending from its base portion to engage a respective recess in the fin holder.

9. A fin substantially as described herein with reference to Fig. 1 and 2 or Fig. 9 of the accompanying drawings.

10. A fin assembly comprising a fin and fin holder,

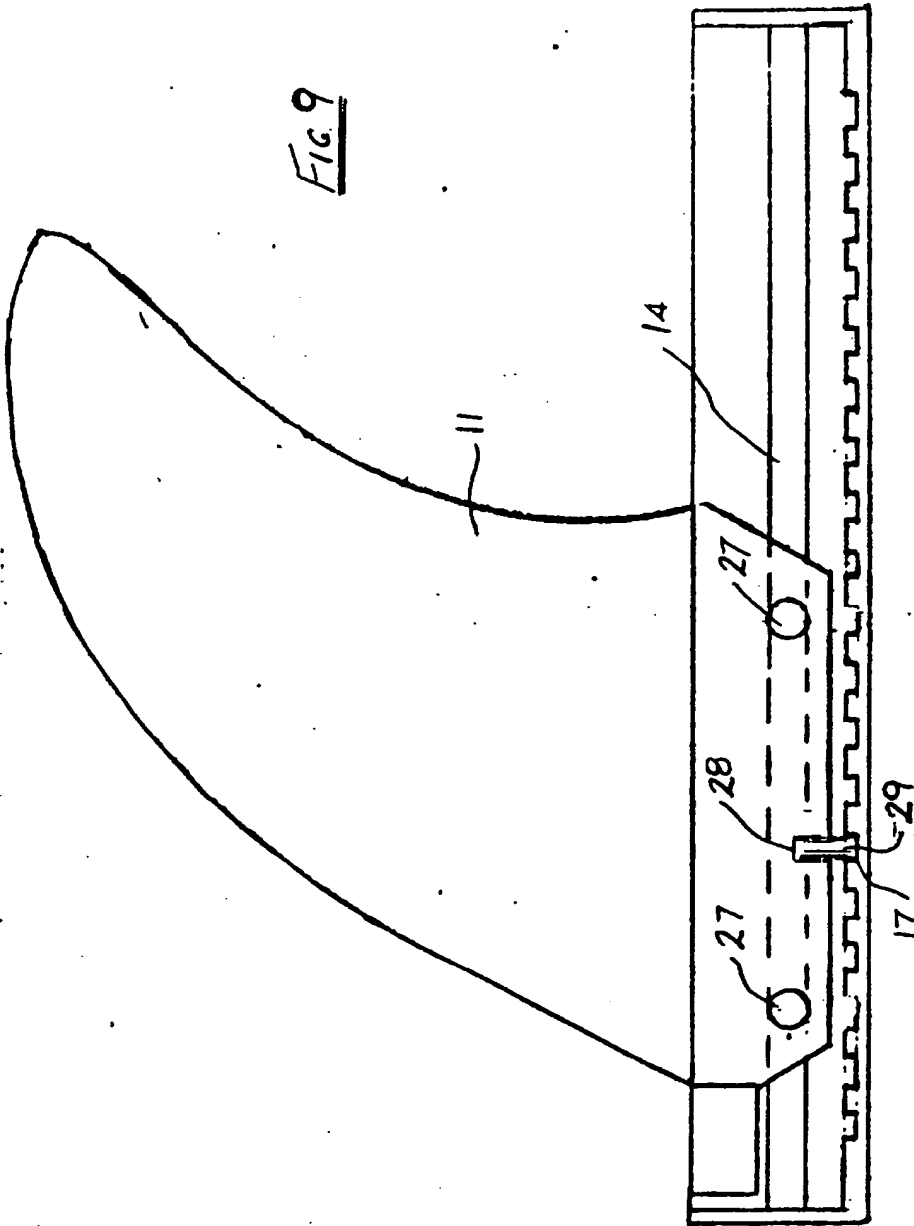
said fin assembly being substantially as described  
herein with reference to the accompanying drawings.

DATED this 24th day of July, 1986.

GLENYS JOY GUDGEON

By her Patent Attorneys  
T.G. AHEARN & CO.





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